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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/902,122	07/10/2001	Hardayal Singh Gill	SJO920010042US1	8000

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EXAMINER

MAGEE, CHRISTOPHER R

ART UNIT PAPER NUMBER

2653

DATE MAILED: 02/08/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/902,122

Applicant(s)

GILL, HARDAYAL SINGH

Examiner

Christopher R. Magee

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 October 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) 1-7 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 8-17 is/are rejected.
- 7) ☒ Claim(s) 11,12 and 16 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 July 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>7/10/2001</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Applicant's election without traverse of Group II (claims 8-17) in the reply filed on 10/27/2004 is acknowledged.
2. Claims 1-7 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 10/27/2004.

Drawings

3. Figures 1-6 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the examiner does not accept the changes, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

4. Claims 11 and 16 are objected to because of the following informalities: Referring to claims 11 and 16, line 2, “outptu” should be –output--, and “of” should be –of--. Appropriate correction is required.

Claim 12 is objected to because of the following informalities: Referring to claim 12, line 1, “claim 7” should be –claim 8--. Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

5. Claims 8 and 13 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

- Regarding claims 8 and 13, “*wherein the flux guide and the free layer are physically isolated by the first and second insulation layers to prevent current shunts therefrom*” is unclear and confusing. The present invention, as shown in Figure 7, shows the free layer [732] in direct contact with the upper shield (S2) [750].

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 8-17 are rejected under 35 U.S.C. 102(e) as being anticipated by Watanabe et al. (hereinafter Watanabe) (US 6,36,391 B2).

- Referring to claims 8 and 13, Watanabe discloses a magnetic storage system comprising:

a magnetic recording medium [201],

a tunnel valve sensor [Fig. 2] disposed proximate the recording medium, the tunnel valve sensor comprising:

a tunnel valve (not numbered) disposed at a first shield layer [12], the tunnel valve comprising a free layer [20] distal to the first shield layer [12];

a first insulation layer [col. 8, lines 38-44] formed over the first shield layer [12] and around the tunnel valve;

a flux guide [10] deposited over the first insulation layer [col. 8, lines 38-44], the flux guide being coupled to the tunnel valve at the free layer [22];

a second insulation layer [col. 8, lines 38-44] covering the flux guide;

a second shield layer [11] deposited over the second insulation [col. 8, lines 38-44], wherein the flux guide [10] and the free layer [22] are physically isolated by the first insulation layer [col. 8, lines 38-44] to prevent current shunts therefrom;

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an actuator [204] for moving the tunnel valve sensor across the magnetic recording disk so the tunnel valve sensor may access different regions of magnetically recorded data on the magnetic recording medium; and

a data channel coupled electrically to the tunnel valve sensor for detecting changes in resistance of the tunnel valve sensor caused by rotation of the magnetization axis of the free ferromagnetic layer relative to the fixed magnetization of the pinned layer in response to magnetic fields from the magnetically recorded data [col. 15, lines 55-65].

- Referring to claims 9 and 14, Watanabe shows the flux guide [10] being physically connected to the free layer [22] of the tunnel valve [Fig. 5].

- Referring to claims 10, 11, 15 and 16, Watanabe discloses the flux guide [10] increases the amount of magnetic flux in the tunnel valve and the amount of magnetic flux increase in the tunnel valve enhances the output signal of the tunnel valve [col. 3, line 60 to col. 4, line 8].

- Regarding claims 12 and 17, Watanabe teaches the tunnel valve further comprises:
an antiferromagnetic (AFM) layer [25] of electrically insulating antiferromagnetic material;

a pinned layer [24] of ferromagnetic material in contact with said AFM layer, said pinned layer making electrical contact with said first shield [150];

a free layer [22] of ferromagnetic material; and

a tunnel junction layer [232] of electrically insulating material disposed between said pinned and free layer [col. 12, lines 22-38].

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Conclusion

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher R. Magee whose telephone number is (703) 605-4256. The examiner can normally be reached on M-F, 8: 00 am-5: 30 pm.

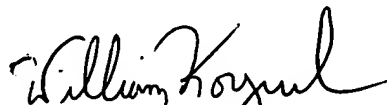
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William Korzuch can be reached on (703) 305-6137. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

February 3, 2005



Christopher R. Magee
Patent Examiner
Art Unit 2653



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